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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/541,608 | 07/07/2005 | Tomiji Tanaka | 268290US6PCT | 8947 |
| 22850 7590 02/20/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER AMARI, ALESSANDRO V | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2872 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | NOTIFICATION DATE | DELIVERY MODE | |
| 3 MONTHS | | 02/20/2007 | ELECTRONIC | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/20/2007.

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|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/541,608 | Applicant(s) TANAKA ET AL. | |
| | Examiner Alessandro Amari | Art Unit 2872 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>7/7/2005</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 10 August 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language, specifically JP 54-40045 and JP 2000-163802. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

2. Claims 3 and 4 are objected to because of the following informalities:

Regarding claim 3, line 14, the phrase, "a laser beam" is confusing since Examiner is uncertain whether the Applicant is referring to the same laser beam recited in line 3 or another laser beam. Claim 4 inherits the same issue.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hays et al US 5,777,760.

In regard to claim 1, Hays et al discloses (see Figures 3, 10) a hologram recording method comprising the steps of modulating a laser beam (31) by a one-dimensional optical modulator (34) in which a plurality of light-modulating pixels are arranged; recording a digital-data signal on a hologram recording medium (38); and recording sync signals (Ax, Bx, Ay, By, ...) on said hologram recording medium in two or more positions retaining a predetermined interval by means of part of the light-modulating pixels in said one-dimensional optical modulator as shown in Figure 3 and as described in column 4, lines 36-67, column 5, lines 1-44 and column 6, lines 6-61.

In regard to claim 2, Hays et al discloses (see Figures 3, 10) a hologram-record reproducing method comprising the steps of applying reference light (33, 35, 37) to a hologram recording medium (38) having a digital data recording section (high density data area), and a sync signal recording section (servo and frame sync border) formed in two or more positions (Ax, Bx, Ay, By, ...) retaining a predetermined interval, reading said digital data and said sync signals, and detecting a shift in a position of said digital-data signal by the sync signals as described in column 7, lines 13-36.

In regard to claim 6, Hays et al discloses (see Figures 3, 10) a hologram reproducing apparatus comprising a laser beam source (31), a photodetector (39) including an array of a plurality of light-detecting elements, and a hologram-recording-medium (38) disposing portion having a recording section for digital-data signal (high intensity data area), and recording sections (servo and frame sync border) for sync

signals in two or more positions (A_x , B_x , A_y , B_y ,...), wherein reference light by a laser beam from said laser beam source is applied to the hologram recording medium disposed in said disposing portion to obtain reproduced light including said digital-data signal and said sync signals recorded on the hologram recording medium, and the reproduced light is detected by said photodetector to detect a shift in a position of said digital-data signal by said sync signals as described in column 7, lines 13-36.

Allowable Subject Matter

5. Claims 3-5 are allowed.

6. Claim 3 is allowable for at least the reason, "wherein part of the light-modulating pixels in said one-dimensional optical modulator optically modulate part of said first laser beam by a digital-data signal, and at least part of the other light-modulating pixels in two or more positions in said one-dimensional optical modulator optically modulate at least part of the other of said first laser beam by sync signals to obtain signal light by a laser beam, the signal light and reference light by said second laser beam are applied to a hologram recording medium to form on the hologram recording medium a recording section for said digital-data signal and recording sections for said sync signals in two or more positions having a predetermined interval" as set forth in the claimed combination. Claim 4 is allowable based upon its dependence on claim 3.

Claim 5 is allowable for at least the reason, "wherein at the time of recording, part of light-modulating pixels in said one-dimensional optical modulator optically modulate part of said first laser beam by a digital-data signal and at least part of the other light-modulating pixels in two or more positions in said one-dimensional optical modulator

Art Unit: 2872

optically modulate at least part of the other of said first laser beam by sync signals to obtain signal light; the signal light and reference light by said second laser beam are applied to the hologram recording medium to form on the hologram recording medium a recording section for said digital data signal and recording sections for said sync signals in two or more positions retaining a predetermined interval" as set forth in the claimed combination.

The prior art of record teaches a hologram recording/reproducing method and apparatus which includes a laser beam source, splitting means, an optical modulator and a hologram recording medium wherein a laser beam is modulated by a one-dimensional optical modulator in which a plurality of light-modulating pixels are arranged; recording a digital-data signal on a hologram recording medium; and recording sync signals on said hologram recording medium in two or more positions retaining a predetermined interval by means of part of the light-modulating pixels in said one-dimensional optical modulator in order detect a shift in a position of said digital-data signal by the sync signals. However, the prior art of record does not teach that part of the light-modulating pixels in said one-dimensional optical modulator optically modulate part of said first laser beam by a digital-data signal, and at least part of the other light-modulating pixels in two or more positions in said one-dimensional optical modulator optically modulate at least part of the other of said first laser beam by sync signals to obtain signal light by a laser beam, the signal light and reference light by said second laser beam are applied to a hologram recording medium to form on the hologram recording medium a recording section for said digital-data signal and

Art Unit: 2872

recording sections for said sync signals in two or more positions having a predetermined interval and there is no motivation or teaching to modify this difference as derived.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro Amari whose telephone number is (571)272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on (571) 272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

avau/1
07 February 2007

Alessandro Amari
ALESSANDRO AMARI
PRIMARY PATENT EXAMINER